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ABSTRACT

While the majority of libraries continue to use cards as their primary medium for public catalogs, microform catalogs are gaining popularity because they are more economical, and some libraries may soon be using cathode ray tube (CRT) terminals for displaying catalog data. No definitive information prescribing the space and equipment needs for using microform or CRT catalogs is available. Experience to date suggests that microfilm and microfiche readers require five square feet of space. The readers have been placed in carrels or on counters in some libraries. The number and placement of electrical outlets and the ambient lighting conditions should be considered in making location decisions. A survey of use activity in a comparable facility can give a library a reasonable estimate of the number of readers needed. (KB)

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Estimating Space Requirements for Microfilm Catalogs and CRT Access to Computer Data Bases

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I think it is appropriate to provide some brief background information regarding the current trend in many libraries of adopting microfilm catalogs for public use. Due to the availability of computer stored catalog data from such sources as the Library of Congress MARC files, the Ohio College Library Center, Ballots and some commercial suppliers, many libraries have elected to use these computer stores as a primary source of cataloging information. Since the information is already present in a machine-readable form, the library needs only to enter local information such as call number, location codes and perhaps some local notes. Once this has been accomplished, the library can then have all of the records which have been identified by them as belonging to their library output on microfilm, in printed book form, in traditional card sets or on a cathode ray tube terminal.

While the large majority of libraries continue to have catalog cards produced from these data bases as the primary medium for public catalogs, microform outputs are rapidly gaining acceptance as a viable alternative. The reasons for selecting the film output are basically economic. On a prearranged schedule, such as bi-monthly, the library will have the entire file of their holdings output on Computer Output Microfilm or COM as it is generally known. The process is quick and relatively inexpensive provided the information is already in a computer format. The film catalog eliminates the cost of card sets, the manual effort required to interfile new cards and the need to weed out cards for items no longer in the collection. It also provides for the display of catalog information of all the institution's holdings in even the smallest or most remote outlets. It is in large part for these reasons that the microform catalog has gained considerable popularity in the last few years. It is our judgement that in the interim period of 3-4 years, we will see 150-200 institutions using microform catalogs as the principal means of displaying catalog information to the public.

In some quarters it is thought that the logical progression is for a library to move from the traditional card catalog to the on-line CRT terminals for displaying the catalog data. However, the cost of computer storage for a reasonably complete bibliographic record as well as the terminal hardware costs, coupled with the complexities of programming and terminal use will render this approach impractical on a broad scale for the foreseeable future. As with any process, there is and will continue to be

some exceptions whereby the on-line terminal approach will provide the answer to some libraries' problems in displaying catalog information. By and large we believe this terminal type of device will remain in the domain of the library's staff members for such uses as circulation control, cataloging, inter-library loan and book ordering. While planning space requirements for the terminal devices is absolutely essential, the overall space planning for public microfilm catalogs is critical due to the number of units involved, the fact that they are used by the public rather than staff and the ambient conditions that affect their use. It is for these reasons that most of these remarks are directed towards the public microform catalog and its space considerations.

The entire subject of space planning for these devices must be approached with this caveat - that due to the newness of the microform catalog and CRT terminal in the library, no definitive pattern regarding the required number of units and their placement has yet emerged. What we hope to offer in these remarks today is some history and experience of what has transpired to date coupled with our observations and judgements for future installations.

It is sometimes thought that the use of microform units will result in a net space savings for the using library when compared to the floor space requirements for the card catalog. This in fact would not generally be the case except in those instances of large research or academic libraries with a massive card catalogs.

With that out of the way - let me offer a basic description of the hardware involved in the microform catalog. Basically, there are two types of devices currently being used for public microfilm catalogs; one is the microfiche reader and the other is the microfilm, or roll film, reader. Of the two types of devices, the roll film reader has dominated due to the ease of use and the ability, in most cases, for a single roll of film to contain all of a library's information. In the case of a microfiche reader, there may be dozens, or possibly hundreds of separate fiche "cards" which must be placed in the viewer by the patron. (fiche - 4" X 5.75"; 208 pp./fiche; 500' microfilm = 96 fiche).

The physical dimensions of the readers vary by type of unit and manufacturer, but basically the microfilm readers are approximately 20" in each dimension, while fiche readers are roughly half this size.

Regardless of which device is used, it appears that a work area of 5 square feet (24" X 30") per unit is almost ideal. Of course, not all current installations have this kind of space luxury. While the dimensions of the roll film units are considerably larger than the fiche units, the requirement for a rack or notebook containing microfiche for the fiche readers uses additional space thereby about equalizing the amount of room required for both viewers.

The space considerations of course go far beyond that required by the sheer physical dimensions of the device since one needs a small work area in which to write or record information found in the catalog. This area should be, if possible, in front of the viewer rather than to either side because of the need to look directly into the viewer for the greatest clarity. Additionally, excessive crowding of the readers may well discourage their use by some patrons.

One arrangement that is currently being used in some libraries with seemingly satisfactory results is placements of readers in carrels or small work stations. This scheme has the advantages of eliminating crowding and noise that could result from a concentrated placement of readers in an open area. It has the disadvantages of not being readily identifiable as the catalog to the casual user of the library and consequently, requires some type of overhead sign to direct the user to the catalog area. Also, there is reason to suggest based on observation that someone looking for a single item may prefer to use a unit in a standup position.

Another arrangement which is quite commonplace is to locate the readers on counters such as those used for atlases and indexes. Ideally, these counters should be 40" - 42" high and at least 48" deep if one wishes to place readers on both sides of the counter. If a more narrow counter is used which is intended to accommodate a single line of readers, then it is best to position this counter against a wall or partition.

Readers placed for sit-down use on a table, carrel or work station should be at a height of approximately 28" above floor level. Regardless of their placement, all readers should be set on a surface which is level in order to reduce glare on the screen and to provide easy access to the viewer controls. There is some disagreement among users of microfilm catalogs as to the merits of counter

height placement versus table height placements, and how this placement affects use of the catalog. With the exception of the Juvenile areas where most readers would be positioned for use while seated, a library should examine having a majority of their units at counter height. Observation tends to confirm that counter height readers are used more frequently. The reasons for this are speculative but it would seem that many people are conditioned to using a card catalog while standing, that there is less time involved in simply walking up to the reader vs. having to sit down, and the readers themselves are more visible and accessable at this position. Certainly some sit down locations should be available in all libraries for those people who have need for time-consuming subject searches or other in depth uses of the catalog. For facilities requiring 4 or more readers in a single location within the library, the idea of a circular platform with a 60" diameter and a height of 40 - 42" has a great deal of merit due to its high visibility, ease of patron access and the general uncrowded arrangement that this format provides. You might note that a great deal has been made regarding visibility of the readers. This is due primarily to the fact that in some existing installations where readers are spread out in the library, the units that are most apparent upon entering the library receive the most use. This is fine except for the fact that patrons may be waiting to use those particular units, while readers in less apparent locations go unused since their whereabouts are unknown except to the staff and frequent library users.

Readers for use by the library staff in the public areas are found at both counter and desk height, this being governed by the design of the information station. The only substantial difference between this placement and those for public use is that the staff units are best placed on a swivel base that allows for 180 degrees of motion so that it may be used on either side of the information station or by staff that are adjacent to one another at the same station such as might be found at a circulation desk.

That should be more than sufficient discussion on the pros and cons of standup vs. sitdown locations. Now, for the real nitty-gritty consideration - electrical outlets.

In a phrase - there are never enough of them. Standdard 115 volt, grounded outlets simply disappear, never existed in sufficient quantity to begin with or someone has cleverly concealed them with carpeting so that they may

never been seen again. For those of you comtemplating new facilities forget for the moment if you will, flying buttresses and cantilever construction in your projects and simply see that there are a sufficient number of electrical outlets to handle the electronic equipment that may be incorporated in your library in the future. I say all of this with tongue-only-slightly-in-cheek for experience has shown that microform installations have in some cases been seriously compromised due to the general unavailability of outlets. Since virtually all microform catalogs to date have been placed in buildings that were never intended for them, the units often end up being positioned anywhere an outlet can be found. I recall one case where a reader was to be positioned at a particular place on a circulation desk. The problem was that the outlet was on the floor, but on the opposite side of the desk. The power cord from the reader could have been neatly run underneath the carpeting to this outlet. However, the local fire code would not permit this arrangment due to the supposed fire hazard that this might create. As a result, the staff elected to have the power cord run over head and down from the false ceiling to the outlet. Indeed, the fire hazard had been removed, but now anyone working behind that desk was in imminent danger of strangulation from this overhanging cord. While I am citing extremely difficult cases for the sake of illustration, it is apparent that number and placement of outlets is crucial in planning an installation of this type of catalog.

Since most institutions would not have determined in the construction phase whether they ultimately would be using this type of system, it may well have merit to plan for at least 2 electrical outlets in the floor for each 72 drawer catalog case that is to be placed in the public areas. Also, an electrical outlet should be placed at each anticipated information station as well as one outlet for each desk sized portion of a circulation counter.

There has been no evidence to indicate that normal power surges or noisy lines have any adverse effect on most microform units. Consequently neither voltage regulators nor transformers are necessary for installation.

Ambient temperature and humidity conditions are of little concern in reader operation, since they exhibit satisfactory performance under any conditions that would ordinarily be considered tolerable for people. These same facts would not necessarily be true for CRT terminals. The

specific environmental tolerances for terminals should be checked with individual manufacturers. Normally, any solid state device, (and most terminals are in this catagory,) require carefully controlled temperature and humidity values, as well as clean, regulated power inputs.

The ambient conditions which do affect the performance and utility of the microform catalog are dust and lighting. The roll film reader in particular, which generates a considerable amount of static electricity due to the high speed movement of the film, is susceptible to gathering or attracting dust to the film surfaces. While even extreme amounts of dust are unlikely to disable the reader, it will affect the clarity of the image. Let it suffice to say that the units should be installed in as dust-free a location as possible within the facility.

Lighting considerations are of more importance when deciding where to locate film catalogs. The readers should not face into direct sunlight because of the loss of contrast and glare which will result from this. I recall one situation where a series of glass panels at a second story height permitted direct sunlight to shine on the center of the public area around midafternoon. This of course, was the object of the design. It so happened that this library chose to locate their microfilm readers in this same central floor area. With the arrival of the midafternoon sun, these catalogs became virtually useless for about a one hour period because of this direct sunlight. Eventually, the units were relocated in a somewhat more protected position. Bright, overhead fluorescent lamps shining directly on the readers will have much the same effect. Perhaps it is exaggeration on my part to suggest these lighting circumstances truly render the catalog useless, but without a doubt, direct, bright light does severely compromise the quality of the image on the screen. I by no means suggest that the reader should be restricted to darkened areas, but only that they be removed from an exceedingly bright area whenever possible.

Now for the real question that must be asked before anyone can adequately plan for the space requirements for the microform catalog. - How many readers will be needed in my facility to display catalog information to patrons and staff?

As I mentioned earlier in these remarks, there is no absolute formula or definitive survey to provide the answer to this question. The best approach for determining the

necessary numbers required, is to actually perform a survey of catalog use activity in a facility with a similar use profile. The first step in this type of survey is to determine peak use periods and then continue to sample activity during these predetermined peak periods. In most cases, one week of sampling should be adequate. Once actual catalog use is arrived at, the institution should plan on installing units based on 90% of the number of uses at these peak times. If the survey was reasonably accurate, this would mean of course, that there would be times when one would have to wait to use the catalog. This same circumstance has existed for years with some card catalogs. While no one would choose to wait to use the catalog, I believe it is impractical to consider purchasing the number of units required to assure that there will never be any delay, even during peak times, in using the catalog.

To insure a reasonable estimate of the number of units in an academic or research library, I believe it is essential that some form of survey be conducted. This same technique would be highly desirable for the public library. However, in the case of the public library some rules-of-thumb can be applied to offer guidance in determing the number of units required. For large central or branch activities; one reader per 40,000 volumes circulated, plus 2 units for staff use seem to be workable numbers based on experience. For smaller outlets; one unit per 30,000 volumes of circulation, plus 1 unit for staff use appears to be a satisfactory arrangement. So, for a large public library circulation 600,000 volumes a year, 17 readers would be required. This is a considerable amount of hardware and as such will demand intelligent space planning in order to derive the greatest utility and patron acceptance of this type of catalog. Failure to plan for these space requirements will serve to compromise the benefits that are available from this type of catalog display system.

All of these remarks can be summed up in just a few key phrases to be remembered when estimating your space requirements for both microfilm catalogs and CRT terminals:

* The devices must be placed so that the user is immediately aware of their presence.

* Ideally, an area of 5 or more square feet should be allowed for each unit.

* Sufficient electrical outlets should be incorporated into the building.

* Position the catalogs so that they are out of direct sunlight or overhead lighting.

* Lastly, regardless of the amount of space that is allowed for the project, there is an unwritten physical law that applies in particular to libraries, and that is; that a vacuum quickly becomes a plenum. That's because someone always says "What's all that empty space doing there, we should be able to fit such and such on those reader tables." Clearly, this should be avoided.

Thank you kindly.